west virginia department of environmental protection

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

December 13, 2013

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-5101728, issued to NOBLE ENERGY, INC., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

James Martin
Chief

Operator's Well No: WEB22HHS
Farm Name: JENKINS, TIM M. & TAMMY
API Well Number: 47-5101728
Permit Type: Horizontal 6A Well
Date Issued: 12/13/2013

Promoting a healthy environment.

API Number: 51-01728

PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACOE). Through this permit, you are hereby being advised to consult with USACOE regarding this proposed activity.

2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.

3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.

4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.

5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations,* 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.

6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.

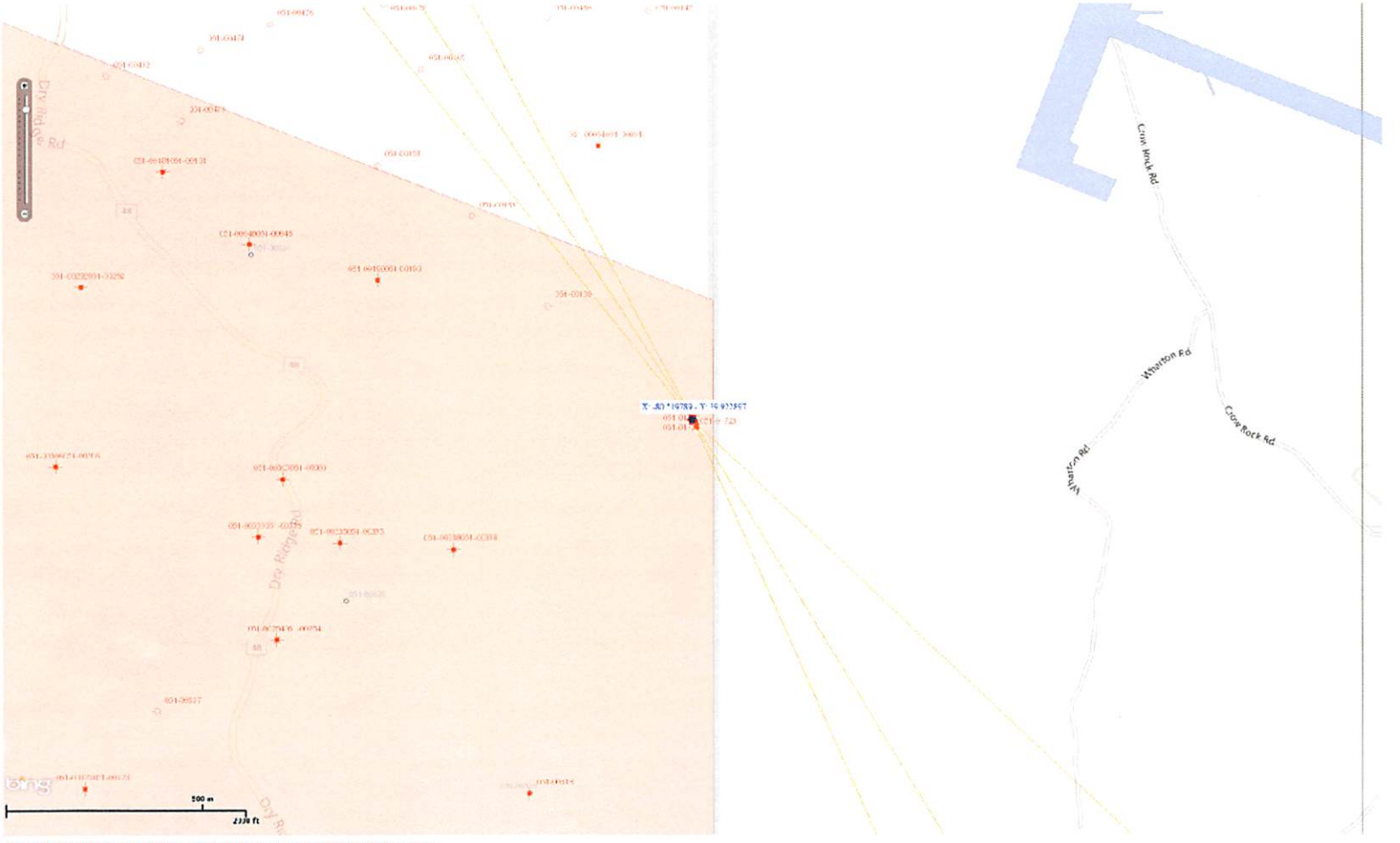
7. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.

8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

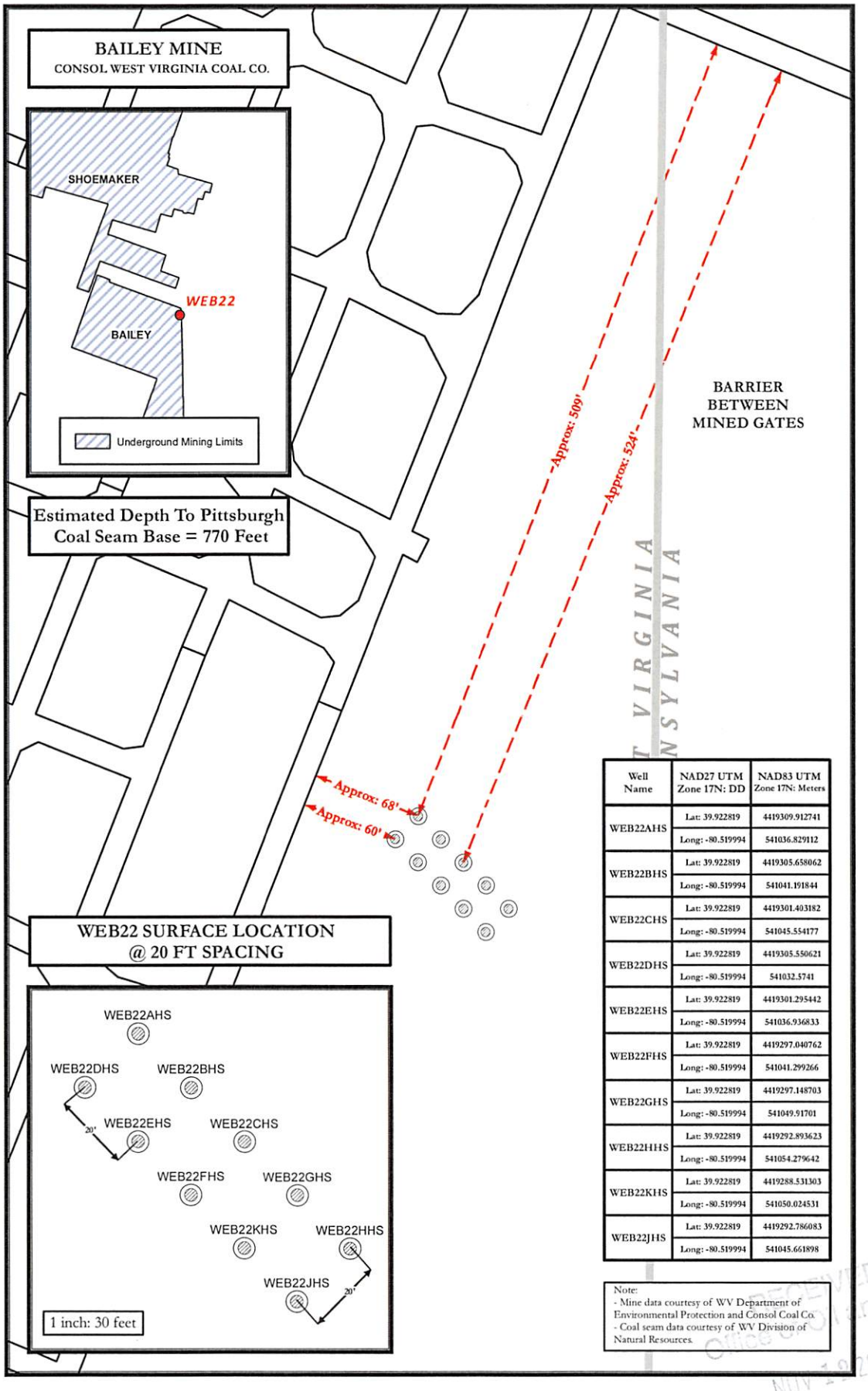
S1-01728

Map from a Flex Viewer application

Powered by ArcGIS



51-01728



Well Name	NAD27 UTM Zone 17N: DD	NAD83 UTM Zone 17N: Meters
WEB22AHS	Lat: 39.922819	4419309.912741
	Long: -80.519994	541036.829112
WEB22BHS	Lat: 39.922819	4419305.658062
	Long: -80.519994	541041.191844
WEB22CHS	Lat: 39.922819	4419301.403182
	Long: -80.519994	541045.554177
WEB22DHS	Lat: 39.922819	4419305.550621
	Long: -80.519994	541032.5741
WEB22EHS	Lat: 39.922819	4419301.295442
	Long: -80.519994	541036.936833
WEB22FHS	Lat: 39.922819	4419297.040762
	Long: -80.519994	541041.299266
WEB22GHS	Lat: 39.922819	4419297.148703
	Long: -80.519994	541049.91701
WEB22HHS	Lat: 39.922819	4419292.893623
	Long: -80.519994	541054.279642
WEB22KHS	Lat: 39.922819	4419288.531303
	Long: -80.519994	541050.024531
WEB22JHS	Lat: 39.922819	4419292.786083
	Long: -80.519994	541045.661898

Note:
- Mine data courtesy of WV Department of Environmental Protection and Consol Coal Co.
- Coal seam data courtesy of WV Division of Natural Resources.

RECEIVED
Office of Oil and Gas
NOV 19 2013
WV Department of Environmental Protection

WEB22 SITE SAFETY PLAN
- WELLHEAD TOPHOLE LOCATION -

Surface Hole Locations — Underground Mining Detail

0 35 70 140 Feet

Scale 1" = 70'

Projection: NAD_1927_StatePlane_West_Virginia_North_FIPS_4701
Units: Foot US

noble energy

Disclaimer: All data is licensed for use by Noble Energy Inc. use only.

Date: 7/8/2013
Author: ChristopherGlover

5/6

Document Path: G:\Denver\GIS-Denver\Projects\District_30\Appalachia\MXDs\EHSR\Permitting\Webster\WEB22\D30_PA_WV_WEB22_Topohle_Mine_Locations.mxd

51-01728

WW-6B
(9/13)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

51 09 453

1) Well Operator: Noble Energy, Inc.	494501907	Marshall	Webster	Majorsville
	Operator ID	County	District	Quadrangle

2) Operator's Well Number: WEB 22 HHS Well Pad Name: WEB 22

3) Farm Name/Surface Owner: Tim Turley & Tammy Jenkins Public Road Access: Dry Ridge Rd/CR 48

4) Elevation, current ground: 1325' Elevation, proposed post-construction: 1340.25'

5) Well Type (a) Gas ■ Oil _____ Underground Storage _____
Other _____
(b)If Gas Shallow ■ Deep _____
Horizontal ■

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Associated Pressure(s):
Target-Marcellus, Depth-6875', Thickness-48', Pressure-4569#

8) Proposed Total Vertical Depth: 6913'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 12,192'

11) Proposed Horizontal Leg Length: 4,863"

12) Approximate Fresh Water Strata Depths: 212', 295'

13) Method to Determine Fresh Water Depths: Offset well data

14) Approximate Saltwater Depths: None noted in offsets

15) Approximate Coal Seam Depths: 761' to 771' Pittsburgh

16) Approximate Depth to Possible Void (coal mine, karst, other): None anticipated, drilling in pillar-mine maps attached

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes ☑ No ☐

(a) If Yes, provide Mine Info: Name: Bailey Mine
Depth: 770'
Seam: Pittsburgh
Owner: Consolidated Coal Company an affiliate of Consol Energy

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WW-6B
(9/13)

18) **CASING AND TUBING PROGRAM**

TYPE	Size	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling	INTERVALS: Left in Well	CEMENT: Fill-up (Cu. Ft.)
Conductor	30"	New	LS	117#	40'	40'	CTS
Fresh Water	20"	New	LS	94#	400'	400'	CTS
Coal	13 3/8"	New	J-55	54.5#	1220'	1220'	CTS
Intermediate	9 5/8"	New	J-55	36#	3356'	3356'	CTS
Production	5 1/2"	New	P110	20#	12,192'	12,192'	TOC 200' above 9.625 casing shoe
Tubing							
Liners							

LKC
12-13-13

TYPE	Size	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield (cu. ft./k)
Conductor	30"	36"	0.375		Type 1/Class A	1.2
Fresh Water	20"	26"	.438	2110	Type 1/Class A	1.2
Coal	13 3/8"	17 1/2"	.380	2730	Type 1/Class A	1.2
Intermediate	9 5/8"	12 3/8"	.352	3520	Type 1/Class A	1.19
Production	5 1/2"	8 3/4" & 8 1/2"	.361	12,640	Type 1/Class A	1.27
Tubing						
Liners						

PACKERS

Kind:				
Sizes:				
Depths Set:				

51-01728

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(9/13)

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill the vertical depth to the Marcellus at an estimated total vertical depth of approximately 6,913 feet. Drill Horizontal leg - stimulate and produce the Marcellus Formation. If we should encounter an unanticipated void we will install casing at a minimum of 20' below the void but not more than 100' below the void, set a basket and grout to surface.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

The stimulation will be multiple stages divided over the lateral length of the well. Stage spacing is dependent upon engineering design. Slickwater fracturing technique will be utilized on each stage using sand, water, and chemicals. See attached list. Maximum pressure not to exceed 10,000 lb.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 18.5

22) Area to be disturbed for well pad only, less access road (acres): 8.45

23) Describe centralizer placement for each casing string:

No centralizers will be used with conductor casing. Surface casing will have bow spring centralizers on first 2 joints then every third joint to 100' from surface. Intermediate casing will have bow spring centralizers on first 2 joints then every third joint to 100' from surface. Production string will have a rigid bow spring every joint to KOP, rigid bow spring every third joint from KOP to top of cement.

24) Describe all cement additives associated with each cement type:

Conductor-1.15% CaCl *Surface and Coal (Intermediate)- Class A Portland Cement CaCl 2%, 2% Accelerator, 0.2% Antifoam and 0.125#/sk Flake. Excess Yield=1.18 Production- 14.8 ppg class A 25:75:0 System +2.6% Cement extender, 0.7% Fluid Loss additive, 0.45% high temp retarder, 0.2% friction reducer 15% Excess Yield=1.27 TOC greater or equal to 200' above 9.625" shoe.
*Surface and Coal string WVDEP approved variance attached.

25) Proposed borehole conditioning procedures:

Conductor-The hole is drilled w/air and casing is run on air. Apart from insuring the hole is clean via air circulation at TD, there are no other conditioning procedures. Surface-The hole is drilled w/air and casing is run on air. Fill with KCl water once drilled to TD. Once casing is at setting depth, circulate a minimum of one hole volume prior to pumping cement Coal-The hole is drilled and cased w/air or on Freshwater based mud. Once casing is at setting depth, the hole is filled w/KCl water and a minimum of one hole volume is circulated prior to pumping cement. Intermediate-Once surface casing is set and cemented, intermediate hole is drilled either on air or SOBM and filled with KCl water once drilled to TD. Production-The hole is drilled with SOBM and once to TD, circulated at maximum allowable pump rate for at least 6x bottoms up. Once on bottom with casing, circulate a minimum of one hole volume prior to pumping cement.

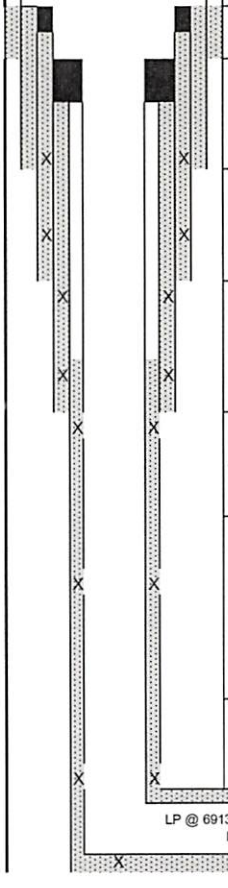
*Note: Attach additional sheets as needed.

51-01728

noble energy

DRILLING WELL PLAN
WEB-22H-HS (Marcellus HZ)
Macellus Shale Horizontal
Marshall County, WV

		WEB-22H SHL (Lat/Long)	(519795.99N, 1713982E) (NAD27)
Ground Elevation	1325'	WEB-22H LP (Lat/Long)	(519496.01N, 1714596.97E) (NAD27)
Azm	141°	WEB-22H BHL (Lat/Long)	(515512.66N, 1717386.14E) (NAD27)



HOLE	CASING	GEOLOGY	MD	TVD	MUD	CEMENT	CENTRALIZERS	CONDITIONING	COMMENTS
36	30" 117#	Conductor	40	40	AIR	To Surface	N/A	Ensure the hole is clean at TD.	Stabilize surface fill/soil. Conductor casing = 0.375" wall thickness
24	20" 94#	Surface Casing	400	400	AIR	15.6 ppg Type 1 + 2% CaCl, 0.25# Lost Circ 30% Excess Yield = 1.18	Centralized every 3 joints to surface	Fill with KCl water once drilled to TD. Once casing is at setting depth, circulate a minimum of one hole volume prior to pumping cement.	Surface casing = 0.438" wall thickness Burst=2730 psi
17 1/2	13-3/8" 54.5# J-55 BTC	Pittsburgh Coal	761	761	AIR	15.6 ppg Type 1 + 2% CaCl, 0.25# Lost Circ 30% Excess Yield = 1.18	Bow Spring on first 2 joints then every third joint to 100' form surface	Fill with KCl water once drilled to TD. Once casing is at setting depth, circulate a minimum of one hole volume prior to pumping cement.	Intermediate casing = 0.380" wall thickness Burst=2730 psi
		Int. Casing	1220	1220					
12 3/8	9-5/8" 36# J-55 LTC	Dunkard Sand	1405	1405	AIR	15.6ppg Class A +0.4% Ret, 0.15% Disp, 0.2% AntiFoam, 0.125#/sk Lost Circ 20% Excess Yield=1.19 To Surface	Bow spring centralizers every third joint to 100' feet from surface.	Fill with KCl water once drilled to TD. Once casing is at setting depth, circulate a minimum of one hole volume prior to pumping cement.	Casing to be ran 250' below the 5th Sand. Intermediate casing = 0.352" wall thickness Burst=3520 psi
		Big Lime	2007	2007					
		5th Sand Base	3106	3106					
		Int. Casing	3356	3356					
8.75" Vertical	5-1/2" 20# HCP-110 TXP BTC	Warren Sand		4567	8.0ppg - 9.0ppg SOBM	14.8ppg Class A 25:75:0 System +2.6% Cement extender, 0.7% Fluid Loss additive, 0.45% high temp retarder, 0.2% friction reducer 10% Excess Yield=1.27 TOC >= 200' above 9.625" shoe	Rigid Bow Spring every third joint from KOP to TOC	Once at TD, circulate at max allowable pump rate for at least 6x bottoms up. Once on bottom with casing, circulate a minimum of one hole volume prior to pumping cement.	Production casing = 0.361" wall thickness Burst=12640 psi Note:Actual centralizer schedules may be changed due to hole conditions
		Java		5240					
		Angola		5456					
		Rhinestreet		6088					
8.75" Curve					12.0ppg-12.5ppg SOBM		Rigid Bow Spring every joint to KOP		
		Cashaqua		6523					
		Middlesex		6622					
		West River		6654					
		Burkett		6710					
		Tully Limestone		6734					
		Hamilton		6760					
8.75" - 8.5" Lateral		Marcellus		6875	12.0ppg-12.5ppg SOBM				
		TD	12192	6913					
		Onondaga		6923					

LP @ 6913' TVD / 7329' MD | 8.75 / 8.5 Hole - Cemented Long String 5-1/2" 20# HCP-110 TXP BTC | +/-4863' ft Lateral | TD @ +/-6913' TVD +/-12192' MD

X=centralizers

RECEIVED
Office of Oil and Gas

DEC 13 2013

WV Department of
Environmental Protection

WW-9
(9/13)

API Number 47 - 51 - 01728
Operator's Well No. WEB 22 HHS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Noble Energy, Inc. OP Code 494501907

Watershed (HUC 10) Dunkard Fork Quadrangle Majorsville

Elevation 1340' County Marshall District Webster

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes ☑ No ☐

Will a pit be used? Yes ☐ No ☑

If so, please describe anticipated pit waste: Closed Loop-No pit will be utilized

Will a synthetic liner be used in the pit? Yes ☐ No ☐ If so, what ml.?

Proposed Disposal Method For Treated Pit Wastes:

_____ Land Application
_____ Underground Injection (UIC Permit Number _____)
■ Reuse (at API Number TBD-Next anticipated well)
■ Off Site Disposal (Supply form WW-9 for disposal location)
_____ Other (Explain _____

Will closed loop system be used? If so, describe: Yes

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air thru intermediate string, then SOBM

-If oil based, what type? Synthetic, petroleum, etc. Synthetic

Additives to be used in drilling medium? Please see attached

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Landfills

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust)

-Landfill or offsite name/permit number? Please see attached

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature

Company Official (Typed Name) Jessica Leska

Company Official Title Regulatory Technician

OFFICIAL SEAL
Notary Public, State Of West Virginia
LAURA L. ADKINS
Hard Rock Exploration, Inc.
P.O. Box 13059 Charleston, WV 25360
My Commission Expires November 23, 2015

Subscribed and sworn before me this 13th day of December, 2013

Laura L. Adkins Notary Public

My commission expires November 20, 2015

51-01728

Site Water/Cuttings Disposal

Cuttings

Haul off Company:

Eap Industries, Inc. DOT # 0876278
1575 Smith Twp State Rd. Atlasburg PA 15004
1-888-294-5227

MAX Environmental Technologie
233 Max Lane
Yukon, PA 25698
PAD004835146

Disposal Locations:

Apex Environmental, LLC Permit # 06-08438
11 County Road 78
Amsterdam, OH 43903
740-543-4389

Westmoreland Waste, LLC Permit # 100277
111 Conner Lane
Belle Vernon, PA 15012
724-929-7694

Sycamore Landfill (Allied Waste) R30-07900105-2010
4301 Sycamore Ridge Road
Hurricane, WV 25526
304-562-2611

Water

Haul off Company:
Dynamic Structures, Clear Creek DOT # 720485
3790 State Route 7
New Waterford, OH 44445
330-892-0164

Disposal Location:

Solidification
Waste Management, Arden Landfill Permit # 100172
200 Rangos Lane
Washington, PA 15301
724-225-1589

Solidification/Incineration
Soil Remediation, Inc. Permit # 02-20753
6065 Arrel-Smith Road
Lowelville, OH 44436

51-01728

Form WW-9

Operator's Well No. WEB 22 HHS

Noble Energy, Inc.

Proposed Revegetation Treatment: Acres Disturbed 18.5 acres Prevegetation pH ______

Lime 2 to 3 Tons/acre or to correct to pH ______

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch Hay or straw at 2 Tons/acre

Seed Mixtures

Temporary

Seed Type	lbs/acre
Tall Fescue	40
Ladino Clover	5
See site plans for full list	

Permanent

Seed Type	lbs/acre
Tall Fescue	40
Ladino Clover	5
See site plans for full list	

Attach:
Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [signature]

Comments: ______

Title: Inspector Date: 10/1/2013

Field Reviewed? (X) Yes ( ) No

Water Management Plan:
Primary Water Sources

WMP-01672	API/ID Number:	047-051-01728	Operator:	Noble Energy, Inc
		WEB22HHS		

Important:

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and
- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and are enforceable as such.

DEP is aware that some intake points will be used for mutiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interepreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov.

APPROVED DEC 0 9 2013

Source Summary

WMP-01672	API Number:	047-051-01728	Operator:	Noble Energy, Inc
		WEB22HHS		

Purchased Water

- Source **West Virginia American Water - Weston Water Treatme** Lewis Owner: **West Virginia American Water**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
8/15/2013	8/15/2014	11,000,000	500,000	-	-

☑ Regulated Stream? **Stonewall Jackson Dam** Ref. Gauge ID: **3061000** **WEST FORK RIVER AT ENTERPRISE, WV**

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **170.57** **Min. Passby (cfs)**

DEP Comments:

- Source **Bethlehem Water Department** Ohio Owner: **Bethlehem Water Department**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
8/15/2013	8/15/2014	11,000,000	200,000	-	-

☑ Regulated Stream? **Ohio River Min. Flow** Ref. Gauge ID: **9999999** **Ohio River Station: Willow Island Lock & Dam**

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs)**

DEP Comments: **Bethlehem Water Department purchases all its water from the City of Wheeling. Thresholds are set based on the location of the City of Wheeling's raw water intake.**

- Source **Wellsburg Water Department** Brooke Owner: **Wellsburg Water Department**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
8/15/2013	8/15/2014	11,000,000	200,000	-	-

☑ Regulated Stream? **Ohio River Min. Flow** Ref. Gauge ID: **9999999** **Ohio River Station: Willow Island Lock & Dam**

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs)**

DEP Comments: **This alluvial groundwater well is, to some extent, under the influence of the Ohio River. Please adhere to stated minimum flow requirements on the Ohio River for withdrawals. http://www.erh.noaa.gov/er/ohrfc/flows.shtml**

- Source **Moundsville Water Board** Marshall Owner: **Moundsville Water Treatment Plant**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
8/15/2013	8/15/2014	11,000,000	2,000,000	-	-

☑ Regulated Stream? **Ohio River Min. Flow** Ref. Gauge ID: **9999999** **Ohio River Station: Willow Island Lock & Dam**

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs)**

DEP Comments: **This alluvial groundwater well is, to some extent, under the influence of the Ohio River. Please adhere to stated minimum flow requirements on the Ohio River for withdrawals. http://www.erh.noaa.gov/er/ohrfc/flows.shtml**

- Source **Dean's Water Service** Ohio Owner: **Dean's Water Service**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
8/15/2013	8/15/2014	11,000,000	600,000	-	-

☑ Regulated Stream? **Ohio River Min. Flow** Ref. Gauge ID: **9999999** **Ohio River Station: Willow Island Lock & Dam**

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs)**

DEP Comments:

- Source **Wheeling Water Department** Ohio Owner: **Wheeling Water Department**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
8/15/2013	8/15/2014	11,000,000	17,500	-	-

☑ Regulated Stream? **Ohio River Min. Flow** Ref. Gauge ID: **9999999** **Ohio River Station: Willow Island Lock & Dam**

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs)**

DEP Comments: **Refer to the specified sation on the National Weather Service's Ohio River forecasts at the following website: http://www.erh.noaa.gov/ohrfc//flows.shtml**

Source	Ohio County PSD	Ohio	Owner:	Ohio county PSD

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
8/15/2013	8/15/2014	11,000,000	720,000	-	-

☑ Regulated Stream? **Ohio River Min. Flow** Ref. Gauge ID: **9999999** **Ohio River Station: Willow Island Lock & Dam**

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs)**

DEP Comments: **Refer to the specified station on the National Weather Service's Ohio River forecast website: http://www.erh.noaa.gov/ohrfc//flows.shtml**

Source Detail

WMP-01672 | API/ID Number: 047-051-01728 | Operator: Noble Energy, Inc

WEB22HHS

Source ID: 30930 | Source Name: West Virginia American Water - Weston Water Treat

West Virginia American Water

Source Latitude: -

Source Longitude: -

HUC-8 Code: 5020002

Drainage Area (sq. mi.): 104.83 | County: Lewis

Anticipated withdrawal start date: 8/15/2013

Anticipated withdrawal end date: 8/15/2014

Total Volume from Source (gal): 11,000,000

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

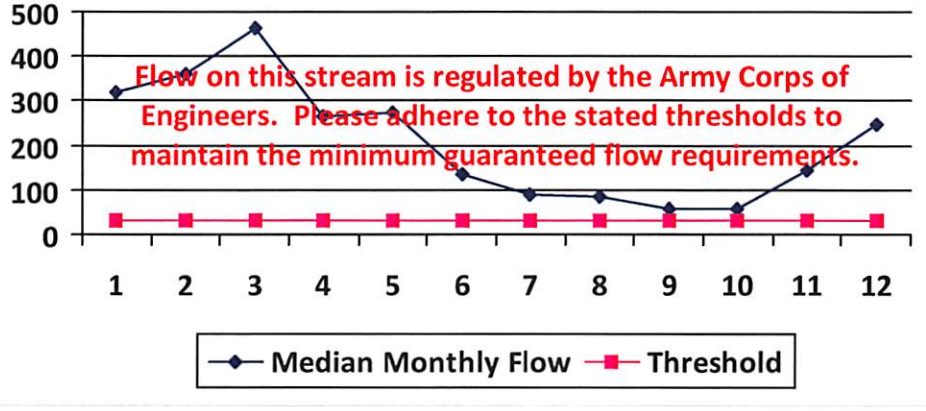
- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] Trout Stream?
- [ ] Tier 3?
- [x] Regulated Stream? — Stonewall Jackson Dam
- [x] Proximate PSD? — Weston WTP
- [x] Gauged Stream?

Reference Gaug: 3061000 | WEST FORK RIVER AT ENTERPRISE, WV

Drainage Area (sq. mi.): 759.00 | Gauge Threshold (cfs): 234

Month	Median monthly flow (cfs)	Threshold (+ pump	Estimated Available water (cfs)
1	321.23	-	-
2	361.67	-	-
3	465.85	-	-
4	266.43	-	-
5	273.47	-	-
6	137.03	-	-
7	88.78	-	-
8	84.77	-	-
9	58.98	-	-
10	57.83	-	-
11	145.12	-	-
12	247.76	-	-

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs):	-
Upstream Demand (cfs):	24.32
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	8.08
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP- 01672 | API/ID Number: 047-051-01728 | Operator: Noble Energy, Inc

WEB22HHS

Source ID: 30931 | Source Name: Bethlehem Water Department

Bethlehem Water Department

Source Latitude: -

Source Longitude: -

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Ohio

Anticipated withdrawal start date: 8/15/2013

Anticipated withdrawal end date: 8/15/2014

Total Volume from Source (gal): 11,000,000

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

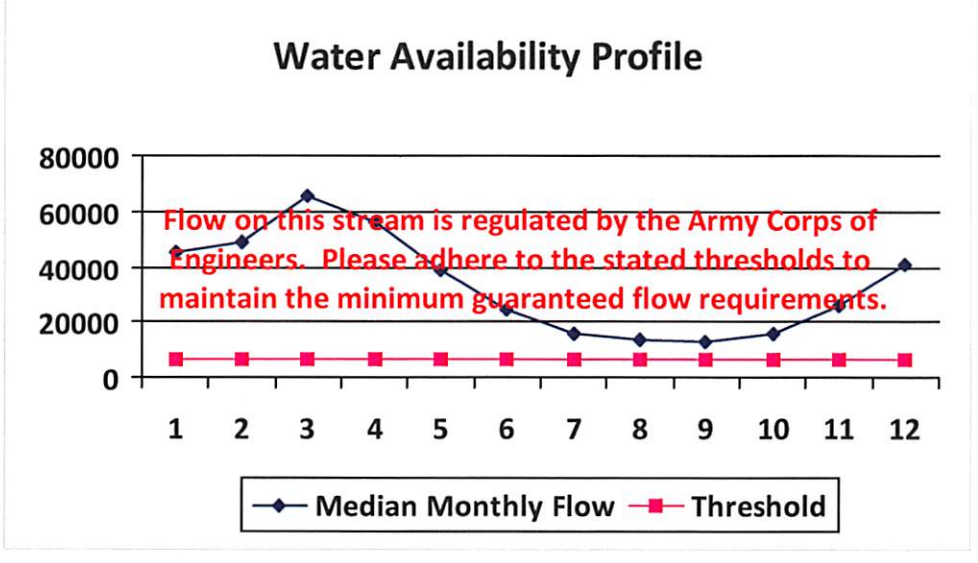
- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] Trout Stream?
- [ ] Tier 3?
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — City of Wheeling
- [x] Gauged Stream?

Reference Gaug: 9999999 — Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs): -

Upstream Demand (cfs):

Downstream Demand (cfs):

Pump rate (cfs):

Headwater Safety (cfs): 0.00

Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): -

Passby at Location (cfs): -

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP-01672 | API/ID Number: 047-051-01728 | Operator: Noble Energy, Inc

WEB22HHS

Source ID: 30932 | Source Name: Wellsburg Water Department

Wellsburg Water Department

Source Latitude: -

Source Longitude: -

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Brooke

Anticipated withdrawal start date: 8/15/2013

Anticipated withdrawal end date: 8/15/2014

Total Volume from Source (gal): 11,000,000

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

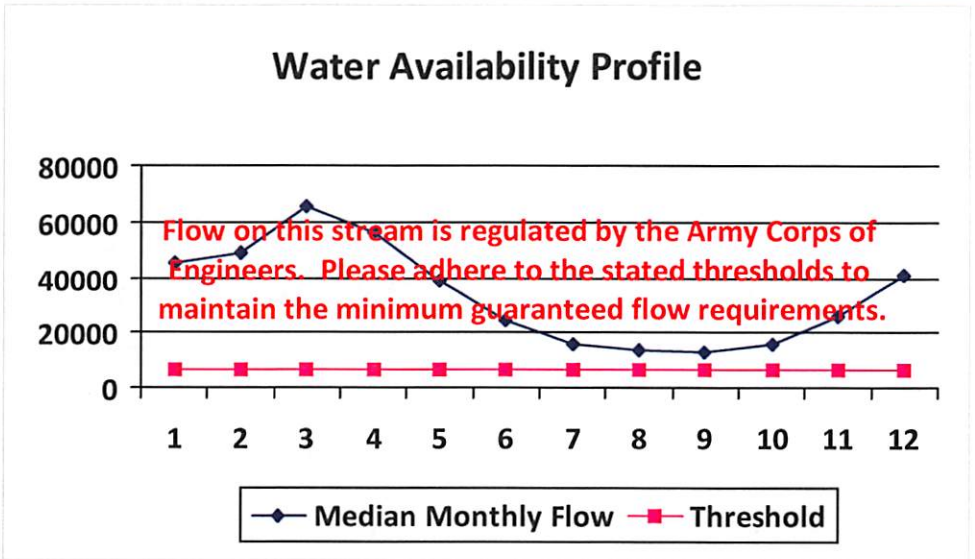
- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] Trout Stream?
- [ ] Tier 3?
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — Wellsburg Water Department
- [x] Gauged Stream?

Reference Gaug: 9999999 — Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs):	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP-01672 | API/ID Number: 047-051-01728 | Operator: Noble Energy, Inc

WEB22HHS

Source ID: 30933 | Source Name: Moundsville Water Board / Moundsville Water Treatment Plant

Source Latitude: - | Source Longitude: -

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Marshall

Anticipated withdrawal start date: 8/15/2013

Anticipated withdrawal end date: 8/15/2014

Total Volume from Source (gal): 11,000,000

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

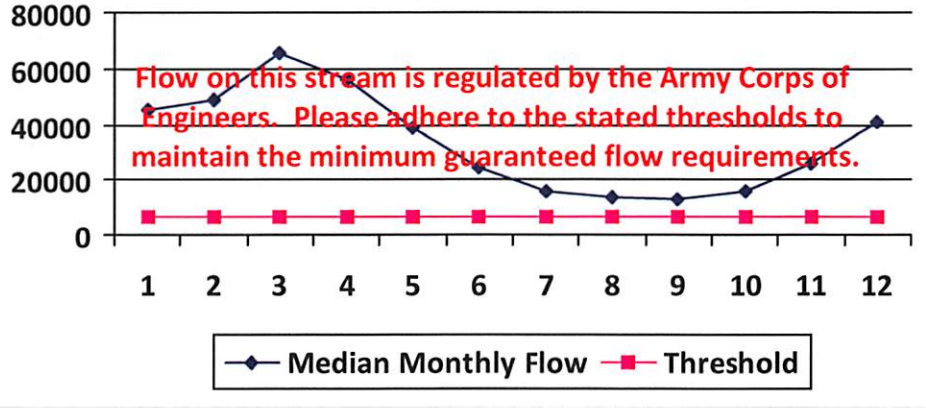
- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] Trout Stream?
- [ ] Tier 3?
- [x] Regulated Stream? — Ohio River Min. Flow
- [ ] Proximate PSD?
- [x] Gauged Stream?

Reference Gaug: 9999999 — Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs):	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP-01672 | API/ID Number: 047-051-01728 | Operator: Noble Energy, Inc

WEB22HHS

Source ID: 30934 | Source Name: Dean's Water Service

Dean's Water Service

Source Latitude: -

Source Longitude: -

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Ohio

Anticipated withdrawal start date: 8/15/2013

Anticipated withdrawal end date: 8/15/2014

Total Volume from Source (gal): 11,000,000

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

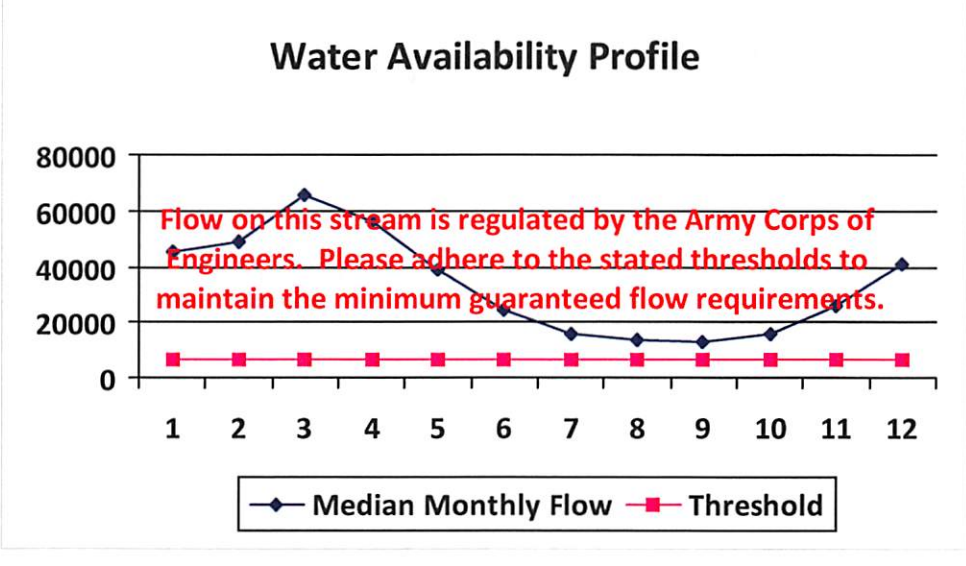
Max. Truck pump rate (gpm)

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] Trout Stream?
- [ ] Tier 3?
- [x] Regulated Stream? — Ohio River Min. Flow
- [ ] Proximate PSD?
- [x] Gauged Stream?

Reference Gaug: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs):	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP-01672 | API/ID Number: 047-051-01728 | Operator: Noble Energy, Inc

WEB22HHS

Source ID: 30936 | Source Name: Wheeling Water Department / Wheeling Water Department

Source Latitude: - | Source Longitude: -

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Ohio

Anticipated withdrawal start date: 8/15/2013

Anticipated withdrawal end date: 8/15/2014

Total Volume from Source (gal): 11,000,000

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

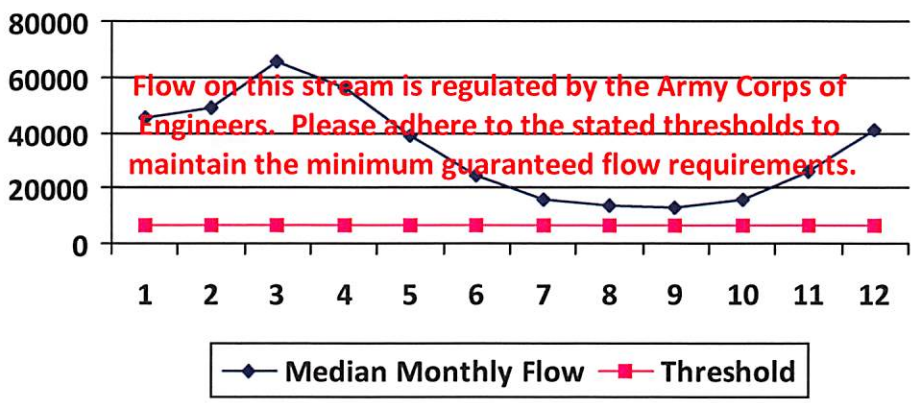
- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] Trout Stream?
- [ ] Tier 3?
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — Wheeling Water Department
- [x] Gauged Stream?

Reference Gaug: 9999999 — Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs): -

Upstream Demand (cfs):

Downstream Demand (cfs):

Pump rate (cfs):

Headwater Safety (cfs): 0.00

Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): -

Passby at Location (cfs): -

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP-01672 | API/ID Number: 047-051-01728 | Operator: Noble Energy, Inc

WEB22HHS

Source ID: 30937 | Source Name: Ohio County PSD / Ohio county PSD

Source Latitude: - | Source Longitude: -

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Ohio

Anticipated withdrawal start date: 8/15/2013

Anticipated withdrawal end date: 8/15/2014

Total Volume from Source (gal): 11,000,000

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

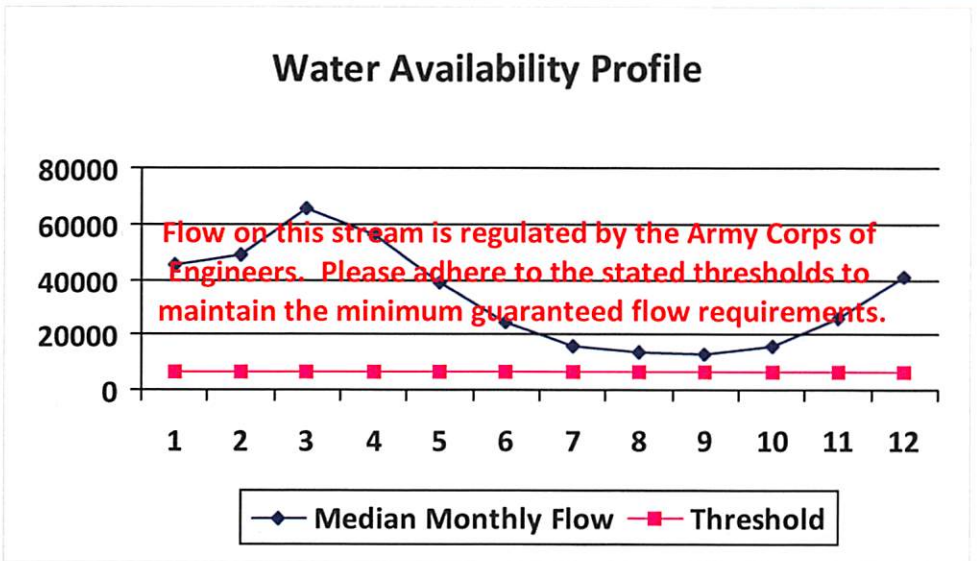
- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] Trout Stream?
- [ ] Tier 3?
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — Wheeling Water Department
- [x] Gauged Stream?

Reference Gaug: 9999999 — Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs):	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Water Management Plan:
Secondary Water Sources

WMP-01672 | API/ID Number 047-051-01728 | Operator: Noble Energy, Inc

WEB22HHS

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Multi-site impoundment

Source ID: 30938 Source Name: SHL #3 Pad Tank Farm

Source start date: 8/15/2013

Source end date: 8/15/2014

Source Lat: 39.971171 Source Long: -80.556856 County: Marshall

Max. Daily Purchase (gal):

Total Volume from Source (gal): 11,000,000

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.

Reference: WMP-1435

WMP-01672	API/ID Number	047-051-01728	Operator:	Noble Energy, Inc
	WEB22HHS			

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID:	30939	Source Name	SHL #4 Pad Tank Farm	Source start date:	8/15/2013
				Source end date:	8/15/2014
Source Lat:	39.956739	Source Long:	-80.5515	County	Marshall
Max. Daily Purchase (gal)		Total Volume from Source (gal):	11,000,000		
DEP Comments:					

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.

Reference: WMP-1436

Source ID:	30940	Source Name	SHL #1 Centralized Freshwater Impoundment	Source start date:	8/15/2013
				Source end date:	8/15/2014
Source Lat:	39.979696	Source Long:	-80.579465	County	Marshall
Max. Daily Purchase (gal)		Total Volume from Source (gal):	11,000,000		
DEP Comments:					

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.

Reference: WMP-200

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 30941 Source Name SHL #2 Centralized Waste Pit
Source start date: 8/15/2013
Source end date: 8/15/2014

Source Lat: 39.966973 Source Long: -80.561377 County Marshall

Max. Daily Purchase (gal) Total Volume from Source (gal): 11,000,000

DEP Comments: WV51-WPC-00001

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-201**

Source ID: 30942 Source Name SHL #3 Centralized Waste Pit
Source start date: 8/15/2013
Source end date: 8/15/2014

Source Lat: 39.974133 Source Long: -80.55527 County Marshall

Max. Daily Purchase (gal) Total Volume from Source (gal): 11,000,000

DEP Comments: WV51-WPC-00002

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-202**

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 30943 Source Name SHL #4 Centralized Waste Pit
Source start date: 8/15/2013
Source end date: 8/15/2014

Source Lat: 39.963284 Source Long: -80.562743 County Marshall

Max. Daily Purchase (gal) Total Volume from Source (gal): 11,000,000

DEP Comments: WV51-WPC-00003

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-204**

Purchased Water

Source ID: 30935 Source Name Bridgeport Ohio Water Department
Public Water Provider
Source start date: 8/15/2013
Source end date: 8/15/2014

Source Lat: 40.08348 Source Long: -80.736488 County

Max. Daily Purchase (gal) 200,000 Total Volume from Source (gal): 11,000,000

DEP Comments: Please ensure that purchases from this source are approved by, and completed in accordance with, requirements set forth by the State of Ohio Department of Environmental Protection.

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Recycled Frac Water

Source ID: 30944 Source Name: Various

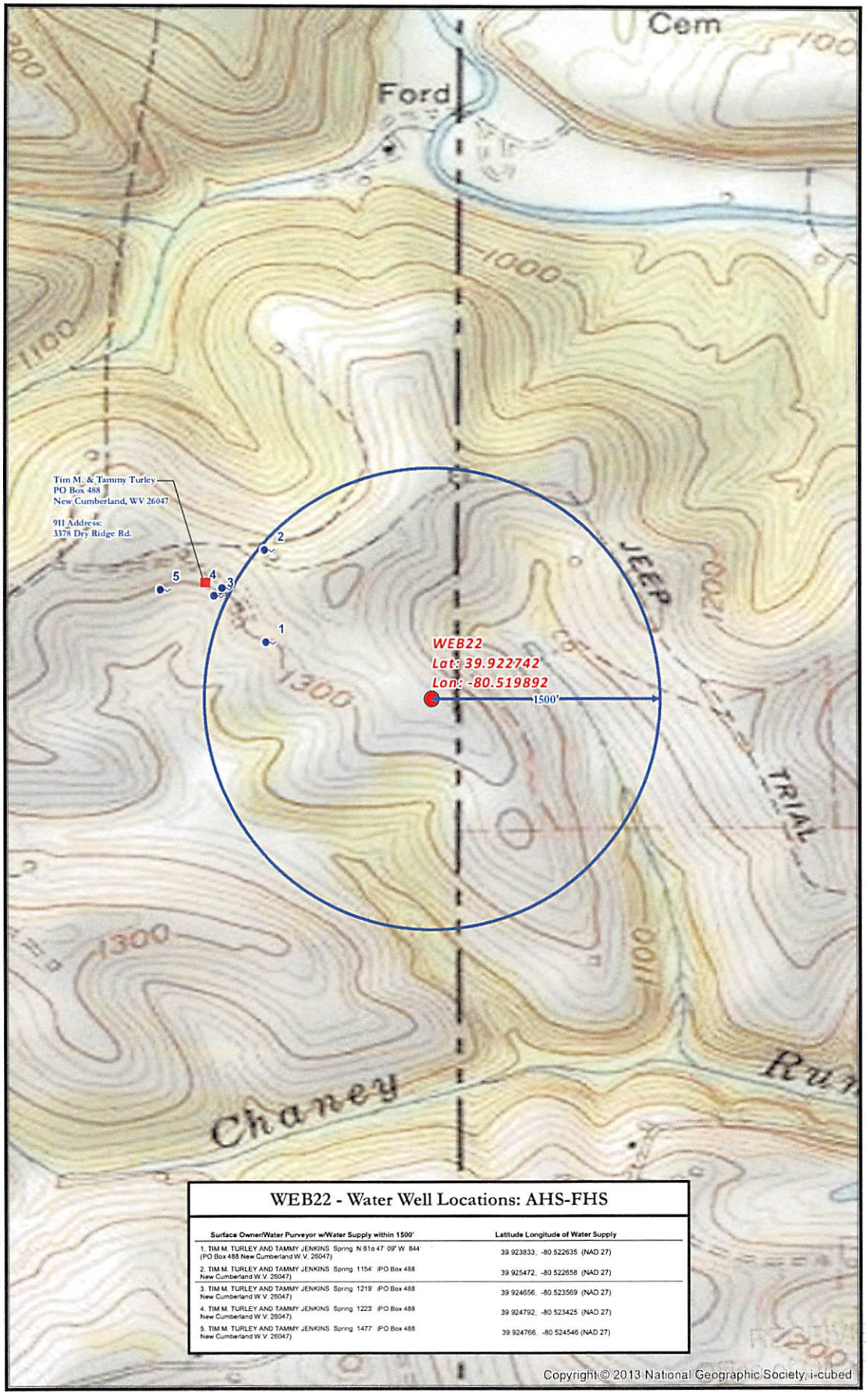
Source start date: 8/15/2013

Source end date: 8/15/2014

Source Lat: Source Long: County:

Max. Daily Purchase (gal): Total Volume from Source (gal): 11,000,000

DEP Comments: Sources include, but are not limited to, the WEB22 well pad.



WEB22 - Water Well Locations: AHS-FHS

Surface Owner/Water Purveyor w/Water Supply within 1500'	Latitude Longitude of Water Supply
1. TIM M. TURLEY AND TAMMY JENKINS Spring N 61o 47' 09" W 844' (PO Box 488 New Cumberland W.V. 26047)	39.923833, -80.522635 (NAD 27)
2. TIM M. TURLEY AND TAMMY JENKINS Spring 1154' (PO Box 488 New Cumberland W.V. 26047)	39.925472, -80.522658 (NAD 27)
3. TIM M. TURLEY AND TAMMY JENKINS Spring 1219' (PO Box 488 New Cumberland W.V. 26047)	39.924656, -80.523569 (NAD 27)
4. TIM M. TURLEY AND TAMMY JENKINS Spring 1223' (PO Box 488 New Cumberland W.V. 26047)	39.924792, -80.523425 (NAD 27)
5. TIM M. TURLEY AND TAMMY JENKINS Spring 1477' (PO Box 488 New Cumberland W.V. 26047)	39.924766, -80.524546 (NAD 27)

WEB22 SITE SAFETY PLAN
- WATER WELLS PROXIMITY -

911 Address
Well Pad
Spring
Water Well

0 375 750 1,500 Feet

Scale 1" = 750'

Projection: NAD_1927_StatePlane_West_Virginia_North_FIPS_4701
Units: Foot US

noble energy

Date: 7/18/2013
Author: ChristopherGlover

Disclaimer: All data is licensed for use by Noble Energy Inc. use only.

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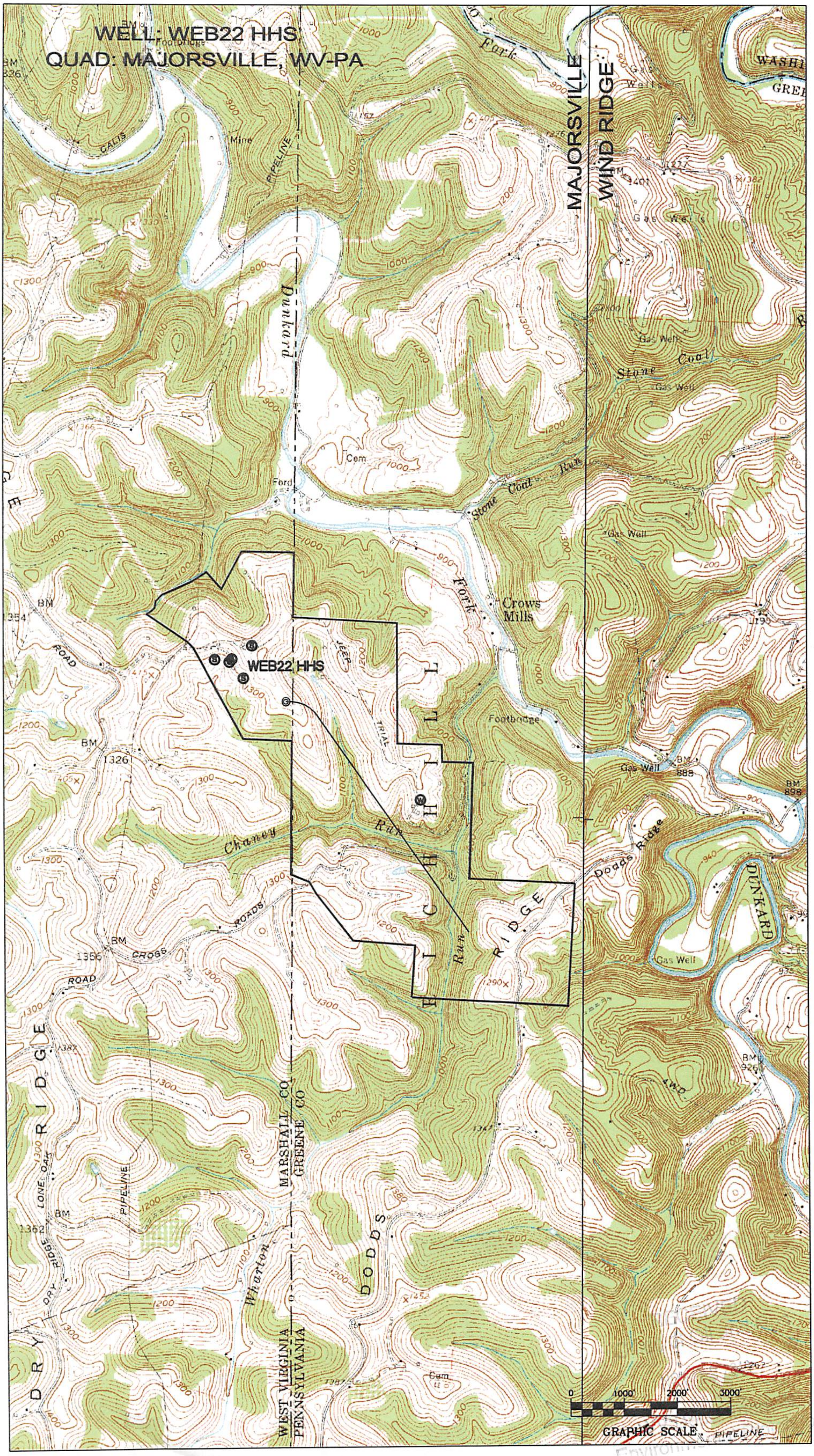
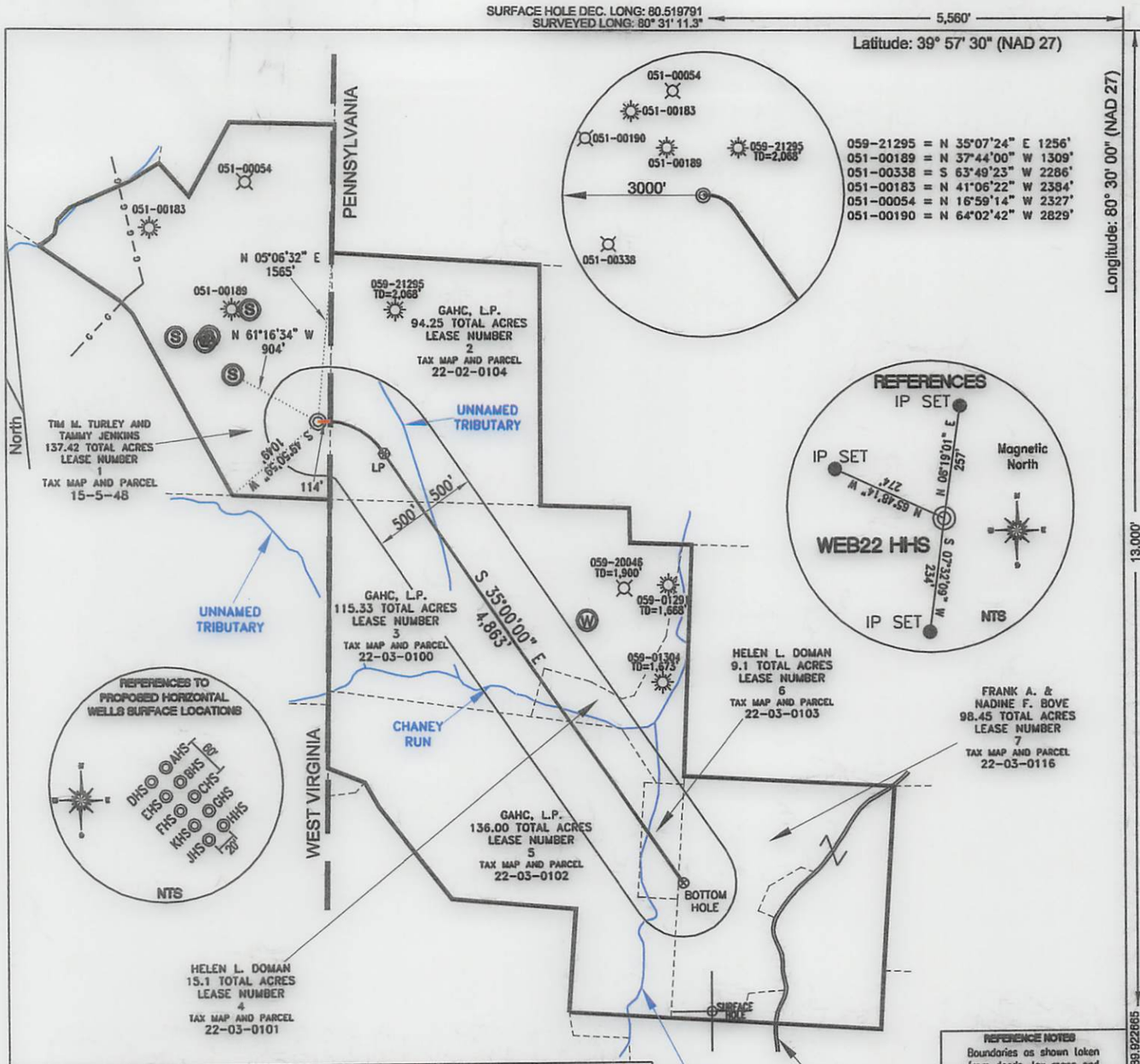
Document Path: G:\Denver\GIS-Denver\Projects\District_30\Appalachia\MXDs\EHSR\Permitting\Webster\WEB22\D30_PA_WV_WEB22_Water_Wells.mxd

51-01728


WELL: WEB22 HHS
QUAD: MAJORSVILLE, WV-PA
MAJORSVILLE
WIND RIDGE
WEB22 HHS
Dunkard
Stone Coal Run
Crows Mills
Chaney Run
Footbridge
Gas Well
Dodds Ridge
DUNKARD
DRY RIDGE
WEST VIRGINIA
PENNSYLVANIA
MARSHALL CO
GREENE CO
PIPELINE
0 1000 2000 3000
GRAPHIC SCALE



SURFACE HOLE LOCATION	LANDING POINT LOCATION	BOTTOM HOLE LOCATION
UTM 17-NAD 83	UTM 17-NAD 83	UTM 17-NAD 83
N) 4419292.90	N) 4419204.62	N) 4418005.31
E) 541054.28	E) 541243.15	E) 542113.20
NAD 27, WV NORTH	NAD 27, WV NORTH	NAD 27, WV NORTH
N) 519796.07	N) 519496.01	N) 515512.66
E) 1713982.04	E) 1714596.97	E) 1717386.14

FILE #: NOB 001
DRAWING #: 2264
SCALE: PLAT - 1"=1400' TICK MARK - 1"=2000'
MINIMUM DEGREE OF ACCURACY: 1/200
PROVEN SOURCE OF ELEVATION: SUBMETER MAPPING GRADE GPS

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed:

L.L.S. #2124 : Ernest J. Benchek III

ERNEST J. BENCHEK III LICENSED No. 2124 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304

DATE: AUGUST 21, 2013

OPERATOR'S WELL #: WEB22 HHS

API WELL #: 47 (STATE) 51 (COUNTY) 01728 (PERMIT)

H6A

Well Type: ☐ Oil ☐ Waste Diposal ☒ Production ☐ Deep
☒ Gas ☐ Liquid Injection ☐ Storage ☒ Shallow

WATERSHED: DUNKARD FORK HUC 10

ELEVATION: 1,325'

COUNTY/DISTRICT: MARSHALL / WEBSTER

QUADRANGLE: MAJORSVILLE WV-PA

SURFACE OWNER: TIM M. TURLEY AND TAMMY JENKINS

ACREAGE: 137.42 +/-

OIL & GAS ROYALTY OWNER: TIM M. TURLEY AND TAMMY JENKINS

ACREAGE: 605.65 +/-

LEASE NUMBERS:

DRILL ☒ CONVERT ☐ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR STIMULATE ☒
PLUG OFF FORMATION ☐ PERFORATE NEW FORMATION ☐ PLUG & ABANDON ☐
CLEAN OUT & REPLUG ☐ OTHER CHANGE ☐ (SPECIFY):

TARGET FORMATION: MARCELLUS

ESTIMATED DEPTH: TVD: 6,913' TMD: 12,192'

WELL OPERATOR: NOBLE ENERGY, INC.

DESIGNATED AGENT: STEVEN M. GREEN

ADDRESS: 333 TECHNOLOGY DRIVE SUITE 116

ADDRESS: 500 VIRGINIA STREET EAST

CITY: CANONSBURG STATE: PA ZIP CODE: 15317

CITY: CHARLESTON STATE: WV ZIP CODE: 25301